Section 3.10
Public Health and Safety

This section describes the existing setting and regulatory environment for public health and safety issues related to hazardous materials handling and storage, and the potential rupture or explosion of the natural gas pipeline and facilities. The section also provides a brief overview of the safety features of the proposed project and relevant state and federal safety requirements. Lodi Gas Storage examined potential public health impacts from using hazardous materials at the project site and from the potential accidental release of hazardous materials. Lodi Gas Storage also examined the potential hazards posed to life and property in the event of a rupture or explosion of the proposed natural gas facilities. Section 3.12, "Transportation and Circulation," discusses potential disruption of emergency vehicle access during construction of the project. Section 3.11, "Public Services and Utilities," discusses public safety concerns related to potential increased demand for emergency response services, including law enforcement and fire protection.

Environmental Setting

Sensitive Receptors in the Project Vicinity

Development of the proposed project and project alternatives involves construction of several natural gas facilities and approximately 8 miles of interconnecting pipeline through mostly rural areas in Solano County. A few residences are located near possible construction areas and facility operations; these are considered sensitive receptors.

Project Characteristics

Hazardous Materials

A Phase I Environmental Site Assessment (ESA) was conducted for the leased lands to identify the presence of recognized environmental conditions (RECs) that may have resulted from past or present operations in the Kirby Hills (ERM

2005). The ESA revealed evidence of 11 RECs in the Kirby Hills. These RECs are described in the ESA report that is included in the CPUC application; the report is available and will be on-file with the CPUC.

Because of heavy equipment used during construction, hazardous materials are expected along the construction corridor and will be stored at the staging areas or within designated work areas. The following materials will be required daily or on a job-specific basis at the facilities:

- Methanol;
- Methyl mercaptan;
- Fuels, lubricants and solvents; and
- Corrosion inhibitors.

Project operations are expected to generate approximately 1,000 gallons of liquid hazardous waste per year, primarily in the form of used oil. The project also will generate small amounts of miscellaneous solid waste (e.g., small quantities of oily rags, tri-ethylene glycol filters, and oil filters).

Safety Programs

Measures incorporated into the project are designed to prevent surface water and groundwater pollution. These measures include vessel high level alarms and secondary containment structures. Additionally, Lodi Gas Storage must comply with the requisite safety management programs.

The facility operation plans will include measures to protect employees, the public, and the environment by including modern gas control systems that enhance operational efficiencies and provide for greater safety. Primary control room equipment will include personal computers and programmable logic controllers, which would provide automation of control and monitoring functions. Other features of the project include the following:

- Storage wells will be metered to allow proper monitoring of the characteristics and performance of the gas storage reservoir. Wellhead emergency shutdown valves will be provided.
- Gas, fire, and vibration sensors will monitor equipment in the compressor building and will be able to shut down the facility automatically if unusual conditions are detected. An automatic call-out system will be used to contact personnel in emergency situations.
- Fire prevention and response in the compressor station will include smoking area restrictions; work area restrictions; firefighting equipment, and fire detection equipment in the compressor building.
- The compressor and separator facilities will be connected to a cathodic protection system. Pipelines will be cathodically protected against

corrosion and electrically isolated from all structural supports. Insulating flanges will be installed at all intersections with other pipelines.

- Flow, temperature, and gas pressure will be monitored between the PG&E Line 401 interconnection, the compressor and separation facilities, and wellheads. The Facility piping system will be monitored to detect the presence of excessive heat and pressure and will also be equipped with overpressure protection.
- At the PG&E meter stations, a gas chromatograph will monitor gas compositionPipeline markers that identify the number to call in case of accidental damage will be placed at intervals along the transmission line route.

Natural Gas Transportation and Safety

DOT regulations 49 CFR Part 192 prescribe federal safety standards for transportation of natural gas by pipeline. One of the key pipeline design factors is the class location. The class location unit is defined by the number of dwelling units, high-occupancy buildings, or public gathering areas within 220 yards of the centerline per mile of pipeline. Based on this definition, natural gas pipelines are classified as follows:

- A Class 1 location has 10 or fewer dwelling units per mile.
- A Class 2 location has more than 10 but less than 46 dwelling units per mile.
- A Class 3 location has 46 or more dwelling units per mile, or is located within 100 yards of either a building (such as a school, restaurant, or other business) or a small, well-defined outside area (such as a playground, recreation area, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period.
- A Class 4 location is in any class location unit where buildings with four or more stories above ground are prevalent.

A design factor (the ratio of the maximum allowable operating pressure [MAOP] relative to the design pressure) as determined by the class location is used during pipeline engineering to provide a factor of safety. The safety factors (the reciprocal of the design factor) for Classes 1 through 4 are 1.39, 1.67, 2, and 2.5, respectively. For example in a Class 1 location, the pipeline would be designed to withstand a pressure of 139 percent of the MAOP. Generally, the higher the design factor, the thicker the walls of the pipeline (although the grade or alloy of the steel may be altered to provide greater strength). Overall, the design factor is greatest when a pipeline is located in high-density residential areas or proximate to schools, businesses, or other high-use public open areas. As land use changes or densities increase, the pipeline owners are required to upgrade the pipeline to meet the appropriate class location or reduce the MAOP to remain in compliance with federal safety requirements (49 CFR 192).

Historically, natural gas transmission and distribution lines and associated facilities have a very low probability of a full-scale rupture that could lead to an explosion resulting in property damage or fatalities. The most recent data available from the DOT Office of Pipeline Safety indicates the following:

- Approximately 300,000 miles of natural gas transmission pipeline (which include pipelines of a diameter and an operating pressure similar to those of the proposed Lodi Gas Storage pipeline) in the United States are subject to DOT jurisdiction.
- Most of those incidents (approximately 70 percent) were related to pipelines that were constructed before the current minimum federal safety standards (49 CFR 192) were promulgated in 1970 (35 Federal Register 13257) and therefore were related to pipelines greater than 30 years old.

From the data presented, it can be concluded that transmission pipelines that have been recently constructed in accordance with minimum federal safety standards, that have been coated to prevent corrosion, and are well marked, are least prone to leaks or other accidents.

Regulatory Setting

A *hazardous material* is defined by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) as a material that poses a significant present or potential hazard to human health and safety or the environment, if released, because of its quantity, concentration, or physical or chemical characteristics (26 California Code of Regulations [CCR] 25501). For the purposes of this analysis, *hazardous materials* include the raw materials and products listed above, and *hazardous waste* includes waste generated by facilities and businesses or waste material remaining onsite as a result of past activities. Applicable regulations and policies considered relevant to the proposed project and project alternatives are summarized below.

Federal Regulations

EPA is the principal federal regulatory agency responsible for the safe use and handling of hazardous materials and hazardous waste. Two key federal regulations pertaining to hazardous materials and hazardous wastes are described below. Other applicable federal regulations are contained primarily in Titles 29, 40, and 49 of the Code of Federal Regulations.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act enables the EPA to administer a regulatory program that extends from the manufacture of hazardous materials to their disposal, thus regulating the generation, transportation, treatment, storage, and disposal of hazardous waste at all facilities and sites in the nation.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund, was passed to facilitate cleanup of the nation's toxic waste sites. In 1986, Superfund was amended by the Superfund Amendment and Reauthorization Act Title III (community right-to-know laws). Title III states that past and present owners of land contaminated with hazardous substances can be held liable for the entire cost of the cleanup, even if the material was dumped illegally when the property was under different ownership.

State Regulations

California regulations are equal to or more stringent than federal regulations. EPA has granted the State of California primary oversight responsibility to administer and enforce hazardous materials and waste management programs. State regulations require planning and management to ensure that hazardous materials and wastes are handled, stored, and disposed of properly in order to reduce risks to human health and the environment. Several key laws pertaining to hazardous materials and wastes are discussed below.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as raw or unused materials that are part of a process or manufacturing step. They are not considered to be hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

Hazardous Waste Control Act

The Hazardous Waste Control Act created the state hazardous waste management program, which is similar to—but more stringent than—the federal Resource Conservation and Recovery Act program. The act is implemented by regulations contained in Title 26 of the California Code of Regulations, which describes the following required aspects for the proper management of hazardous waste:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with the DTSC.

Emergency Services Act

Under the Emergency Services Act, the State developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services. The office coordinates the responses of other agencies, including the EPA, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

Other Laws, Regulations, and Programs

Various other state regulations have been enacted that affect hazardous waste management, including:

- Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), which requires labeling of substances known or suspected by the state to cause cancer; and

- California Government Code Section 65962.5, which requires the Office of Permit Assistance to compile a list of possibly contaminated sites in the state.

Impact Analysis

Information regarding the use, storage, and disposal of hazardous materials and hazardous waste was obtained from Lodi Gas Storage and from historical safety records. Because hazardous materials and hazardous wastes are strictly regulated, this analysis assumes that the proposed project would comply with all pertinent regulations regarding the presence, use, and storage of hazardous materials and hazardous wastes onsite and their transportation offsite. Noncompliance with these regulations would constitute a violation of law and would be subject to penalty.

Significance Criteria

Criteria for determining the significance of health and public safety impacts were developed based on questions contained in the environmental checklist form in Appendix G of the CEQA State Guidelines and on professional judgment. Based on the checklist questions, a project may have a significant effect on the environment if it would result in:

- Creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and hazardous wastes;
- Creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials or hazardous wastes into the environment;
- Impairment of or interference with a locally adopted emergency response plan or emergency evacuation plan; or
- Incompatibility with laws and regulations managing hazardous materials and hazardous wastes.

Impacts

IMPACT 3.10-1: POTENTIAL FOR PUBLIC HEALTH HAZARD INVOLVING THE USE, PRODUCTION, OR DISPOSAL OF HAZARDOUS MATERIALS AND HAZARDOUS WASTES DURING CONSTRUCTION AND OPERATION

Both construction and operation of the project facilities would involve the use of hazardous materials that may result in hazardous conditions onsite. These

materials include fuels, lubricants, and solvents. Hazardous wastes also would be generated during construction and operation, including spent oil, oily rags, and empty solvent containers. Consequently, several programs are incorporated into the proposed project to prevent health and safety risks to the workforce and to the public. These programs include an Emergency Response Plan, a Hazardous Materials Contingency Plan, and a Stormwater Pollution Prevention Plan (as described in Chapter 2 "Project Description"). Development and implementation of these plans would lower the risk of worker or public exposure to hazardous materials or hazardous wastes. Therefore, this impact is considered less than significant and no mitigation is required.

IMPACT 3.10-2: POTENTIAL RISK TO WORKER SAFETY FROM EXPOSURE TO CONTAMINANTS IN THE SOIL AT CONSTRUCTION SITES

Excavation and grading associated with construction of project pipelines, wells, and aboveground structures could expose workers to hazardous wastes that are present in the soils of the area. Lodi Gas Storage funded a Phase 1 ESA (ERM 2005) to determine whether hazards exist in the Kirby Hills portion of the project area. The ESA identified 12 areas within the Lodi Gas lease area that warranted further evaluation for spill or release of hazardous materials, including testing for volatile organic compounds (VOCs) and petroleum hydrocarbons. The potential risk of worker exposure to these materials is considered significant. Implementation of Mitigation Measure PHS-1 will reduce this impact to a less-than-significant level.

IMPACT 3.10-3: POTENTIAL PUBLIC HEALTH HAZARD ASSOCIATED WITH PIPELINE RUPTURE THAT COULD LEAD TO AN EXPLOSION RESULTING IN PROPERTY DAMAGE OR FATALITIES

Implementation of the proposed project would involve placing approximately 8.3 miles of underground pipeline (includes the gas pipeline, temporary transmission line, and flow line) on mostly agricultural land. The pipeline would pass within 220 yards of four homes. Based on the estimate of 300,000 miles of gas transmission pipelines in service since 1986, the rate of industry and public injuries from pipeline safety incidents is approximately 0.05 per 1,000 miles of pipeline per year. Applying this industrywide standard to the estimated 7 miles of pipeline proposed for this project would result in less than 0.0004 injuries to the facility operators and the nearby public per year or approximately 0.01 injuries during the estimated 30-year life of the project. It is also important to note that much of the 300,000 miles of gas pipeline is old and was constructed before the development of modern engineering designs and standards. Implementation of the project would create a risk of accidental rupture (e.g., from agricultural operations or construction excavations) of the pipeline that could lead to an explosion resulting in property damage or fatalities, although natural gas pipelines and associated facilities are associated with very low accident rates.

As required by regulations of the DOT's Office of Pipeline Safety, aboveground markers will be placed along the pipeline corridor (Jones & Stokes Associates 1999). These markers will be placed within the line of sight along the pipeline corridor and will identify the type of utility and a point of contact in case of emergency. In addition, Lodi Gas Storage has committed to provide training and specialty equipment to local fire districts to effectively fight fires at the Lodi Gas Storage facilities.

Therefore, this impact is considered less than significant, and no mitigation is required.

Mitigation Measures

MM PHS-1: IMPLEMENT MEASURES TO AVOID POTENTIAL HEALTH RISKS FOR WORKERS

Potential health risks associated with worker exposure to contaminants in the soil can be avoided in a number of ways. Project facilities can be sited to avoid the areas with potential spills of hazardous materials. If potential problem sites cannot be avoided, a Phase II site assessment could be conducted of the sites within construction zones to further determine the significance of the risk. If a significant risk is present, the site can be remediated or construction techniques can be adopted that are fully protective of the workers. These contingency measures can be identified in the required Hazardous Materials Contingency Plan, which must be approved by the State prior to construction. Implementation of any of these mitigation measures will reduce the potential impact to a less-than-significant level.